

Chapter 246-292 WAC  
Waterworks Operator Certification

Preliminary Significant Rule Analysis

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## Section 1: Introduction

### Authorities

The mission of the Department of Health (department), Office of Drinking Water is to protect the health of the people of Washington by ensuring safe and reliable drinking water. More than 5.5 million Washington residents get their drinking water from a Group A public water system. Group A water systems typically serves drinking water to 15 or more connections. The department regulates Group A public water systems under state law and rule, and a formal agreement known as “primacy” with the U.S. Environmental Protection Agency (EPA) for carrying out the federal Safe Drinking Water Act (SDWA), which establishes minimum standards for drinking water.

### Key definitions and a typical water system

For the purpose of this analysis, several terms must be understood to avoid confusion. It is important to make a distinction between the purveyor, the physical water system, and a certified waterworks operator. Use of the terms “public water system”, “water system”, or “system” refers to the physical water system.

The term “public water system” found in WAC 246-290-020 helps clarify this distinction.

**‘Public water system’** - shall mean any system providing water for human consumption through pipes or other constructed conveyances, excluding a system serving only one single-family residence and a system with four or fewer connections all of which serve residences on the same farm. Such term includes:

- (a) Collection, treatment, storage, and/or distribution facilities under control of the purveyor and used primarily in connection with such system; and
- (b) Collection or pretreatment storage facilities not under control of the purveyor, but primarily used in connection with such system.”

A purveyor is defined in WAC 246-290-010:

**‘Purveyor’** means an agency, subdivision of the state, municipal corporation, firm, company, mutual or cooperative association, institution, partnership, or person or other entity owning or operating a public water system. Purveyor also means the authorized agents of such entities.”

A certified operator is defined in RCW 70.119.020:

**“Certified operator”** means an individual holding a valid certificate and employed or appointed by any county, water-sewer district, municipality,

public or private corporation, company, institution, person, federal agency, or the state of Washington and who is designated by the employing or appointing officials as the person responsible for active daily technical operation.

The definition of a Group A water system comes from the SDWA. WAC 246-290-020(5) defines Group A water systems as community and noncommunity water systems:

**“Community water system”** means any Group A water system providing service to fifteen or more service connections used by year-round residents for one hundred eighty or more days within a calendar year, regardless of the number of people, or regularly serving at least twenty-five year-round (i.e., more than one hundred eighty days per year) residents.

Examples of a community water system might include a municipality, subdivision, mobile home park, apartment complex, college with dormitories, nursing home, or prison.

**“Noncommunity water system”** means a Group A water system that is not a community water system. Noncommunity water systems are further defined as:

**“Nontransient”** (NTNC) water system that provides service opportunity to twenty-five or more of the same nonresidential people for one hundred eighty or more days within a calendar year.

Examples of a NTNC water system might include a school, child day care center, or a business, factory, motel, or restaurant with twenty-five or more employees on-site.

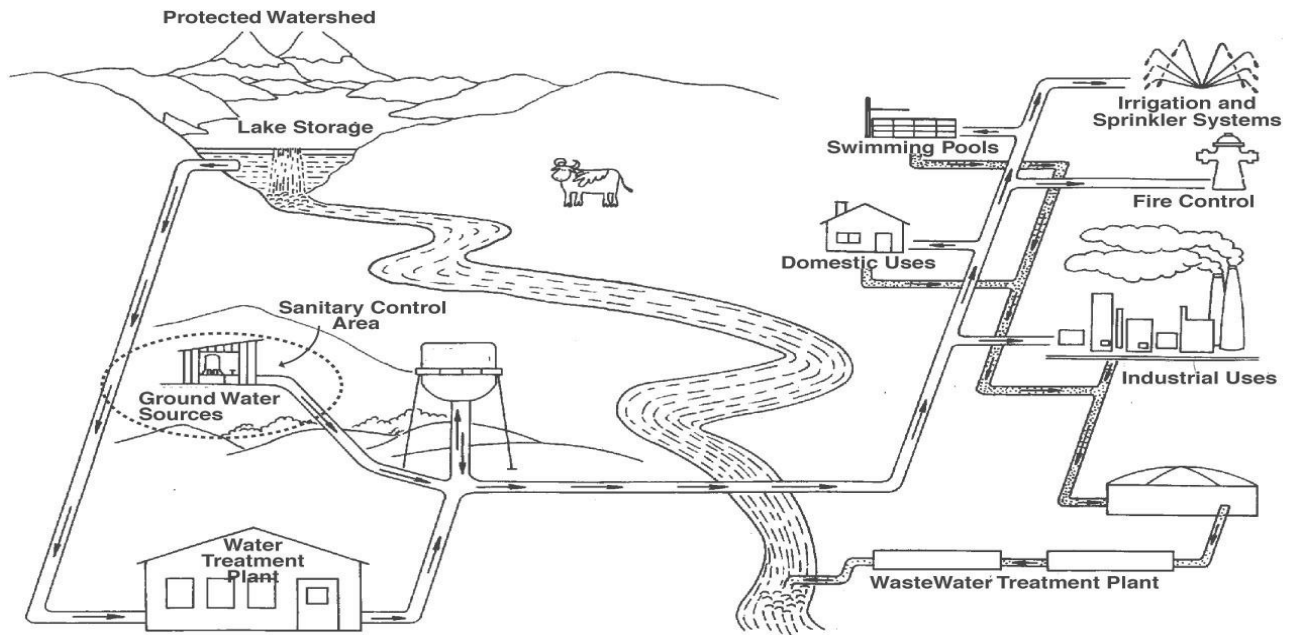
**“Transient”** (TNC) water system that serves:

- (a) Twenty-five or more different people each day for sixty or more days within a calendar year.
- (b) Twenty-five or more of the same people each day for sixty or more days, but less than one hundred eighty days within a calendar year; or
- (c) One thousand or more people for two or more consecutive days within a calendar year.

Examples of a TNC water system might include a restaurant, tavern, motel, campground, state or county park, RV park, vacation cottages, highway rest area, fairground, public concert facility, special event facility, or church.”

Public water systems provide water for human consumption, irrigation, industry, and many other uses. A typical water system has many components. These may include a source of supply, pumps, reservoirs, storage tanks, treatment plants, water mains, pipes, control valves, fire hydrants, flow meters, etc. Figure 1 – Typical Water System shows components of a typical water system from source to users.

Figure 1 – Typical Water System



### Public health and safety

Historically, safe and reliable drinking water is recognized as a critical element of public health protection. Microbial pathogens are the largest contributor to waterborne diseases including, bacterial agents such as *Salmonella*, *Shigella*, and *E. coli* 0157:H7, and protozoal agents such as *Giardia lamblia* and *Cryptosporidium*. Competent operation of a Group A public water system is necessary for the protection of the consumers' health, and is of vital interest to the public.

Certified operators provide a critical link to protecting the health of those who use and consume the drinking water by performing daily operations of a public water system's water treatment plant and distribution system, activities include:

- Water quality monitoring;
- Proper operation of treatment processes;
- Maintenance of facilities;
- Development and implementation of Cross-Connection Control programs;
- Protecting of the public water system from backflow incidents; and
- Taking immediate actions to resolve problems.

In addition to the requirement to have a certified operator, Group A public water systems are classified by system size and complexity, type, source of water supply, and other relevant conditions that affect its' water treatment plant or distribution system performance. Classifying

water systems identifies the correct level of certified operator needed to properly operate these facilities.

To become certified, operators must meet federal and state minimum education and experience requirements, and take and pass an examination. Certified operators must meet professional growth requirements (continuing education) to maintain and expand an operator's expertise by taking training that is relevant to the daily operations of a water system, or advancing by examination in a different operator classification.

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## **Section 2: What is the scope of the rule?**

The primary purpose of the proposed rule revision is to incorporate changes made to chapter 70.119 RCW from Substitute House Bill (SHB) 1283 Chapter 221, Laws of 2009, Public Water System Operators, clarify federal requirements, incorporate Department of Health (department) guidance, incorporate long-standing program practices, and clarify existing rule requirements and procedures.

The rule proposal affects certified operators, Group A public water systems, Cross-connection Control Specialists (CCSs), and Backflow Assembly Testers (BATs).

### **Rule Revision Background**

Revisions are needed to address statutory changes that affect the protection of public health, updates due to program operational changes and current program practices, incorporation of long-standing guidelines into the rule, and rule language clarification and procedure improvements.

#### **1. Statutory Changes**

The Legislature adopted SHB 1283, to amend chapter 70.119 RCW. The bill:

- Strengthened the department's authority to take immediate enforcement actions in cases of gross negligence;
- Clarified the department's authority to certify BATs and CCSs;
- Amended the definition of a "Group A public water system" to be consistent with other related drinking water statutes;
- Added a definition of "operator" to include a BAT, certified operator, and CCS; and
- Added a reference to chapter 18.106 RCW for the specialty plumbers licensing requirements that cover some activities performed by BATs.

## 2. Program Operational Changes

The proposed revisions include program requirements that have been long-standing standard operating procedures, changes include:

- Addressing large public water system recruitment issues to allow broader substitution options for minimum education requirements;
- Adding duties for operators in responsible charge, and duties for CCSs and BATs;
- Revising temporary certification requirements for water treatment plant operators to increase public health protection for these high-risk water systems; and
- Adding minimum requirements for field test and inspection reports completed and submitted by BATs.

## 3. Program Practices and Guidelines

The Waterworks Operator Program Guideline (Guideline) explains how to comply with the rule requirements for certified operators and Group A public water systems. The proposed revisions include requirements that have been long-standing guidelines and program practice.

- Moves and updates the definition of “available” into the duties of a certified operator section (WAC 246-292-032); and
- Updates most sections to clarify requirements using “plain language” from the Guideline.

## 4. Rule Clarification and Procedure Improvements

The proposed revisions include plain language clarifications and procedural improvements.

- Clarifies roles and responsibilities of certified operators;
- Specifies requirements for BATs conducting backflow preventer inspections, field tests, maintenance, and reporting the results of such work;
- Modifies procedures and timelines for certification of operators;
- Clarifies existing requirements to make the rule easier to understand and use, reformatting tables to simplify information, and creating new rule sections; and
- Clarifies federal operator certification requirements.

Many requirements for Group A public water systems in chapter 246-290 WAC (Group A rule), obligate certified operators to perform specific functions even though the Group A rule does not directly regulate operators. The proposed revisions to this chapter adopt specific requirements from the Group A rule that apply specifically to certified operators, such as cross-connection control, backflow prevention, and reporting requirements.

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## **Section 3: What are the general goals and specific objectives of the proposed rule's authorizing statute?**

*RCW 34.05.328(1)(a) requires that agencies clearly state in detail the general goals and specific objectives of the statute that the rule implements.*

The general goals and specific objectives of chapter 70.119 RCW are stated in RCW 70.119.010 legislative declaration:

“The legislature declares that competent operation of a public water system is necessary for the protection of the consumers’ health, and therefore it is of vital interest to the public. In order to protect the public health and conserve and protect the water resources of the state, it is necessary to provide for the classifying of all public water systems; to require the examination and certification of the persons responsible for the technical operation of such systems; and to provide for the promulgation of rules and regulations to carry out this chapter.”

The proposed rule amendments incorporate the requirements of Substitute House Bill (SHB) 1283, clarifying federal requirements, program operational changes, current program practices and guidelines, and clarifies existing requirements.

Chapter 70.119 RCW, requires Group A public water systems to have a certified operator. This law conforms to Section 1419 of the Safe Drinking Water Act amendments of 1996. U.S. Environmental Protection Agency (EPA) adopted federal requirements in 1999 by setting minimum standards for the development, implementation, and enforcement of state operator certification programs.

In order to conform to state and federal requirements, the Department of Health (department) adopted the Waterworks Operator Certification rule, chapter 246-292 WAC in 2001. The department submitted a primacy application to EPA and received approval. Under our primacy agreement, we submit an annual report to EPA to verify that we continue to meet the federal operator certification requirements. Whenever the department revises the rule, we must resubmit a primacy application to EPA for review and approval.

RCW 70.119.050 directs the secretary of the department to adopt and enforce rules to administer an operator certification program. The law directs the department to establish rules for:

- Certifying operators;
- Professional growth requirements; and
- Classification of Group A public water systems.



## **Section 4: Is a rule required to achieve the goals and objectives? What are the consequences of not adopting the rule?**

*RCW 34.05.328(1)(b) requires that agencies determine that the rule is needed to achieve the general goals and specific objectives stated under (a) and analyze alternatives to rulemaking and the consequences of not adopting the rule.*

The proposal meets the general goals and specific objectives identified in RCW 70.119.050 by adopting into rule the legislative changes made in Substitute House Bill (SHB) 1283. The Department of Health assessed the current rule chapter, the authorizing statute, legislative changes made in SHB 1283, and federal requirements, and determined that rule amendments are needed to achieve the goals and objectives. The program changes directed by statute require adopting amendments. There are no feasible alternatives to rulemaking.

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## **Section 5: What are the Probable Costs and Benefits of the rule?**

*RCW 34.05.328(1)(d) requires agencies to determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented.*

The proposal establishes requirements for certification of Cross-Connection Control Specialists (CCSs) and Backflow Assembly Testers (BATs) and other statutory changes, incorporates requirements that are long-standing current program practice or operational changes, Department of Health (department) guidance, federal requirements, and rule language improvements.

The department determined the proposed revision includes some significant legislative rule sections that are subject to the requirements of RCW 34.05.328(5). The proposed revision includes new sections, changes to existing sections, and repeals one section from the current chapter.

This analysis evaluates each of the twenty-three proposed new or amended rule sections and the one repealed rule section to determine whether the changes in each section are “significant” or “non-significant.”

To obtain cost estimates for the proposed changes, the department consulted stakeholders (see Appendix A) to determine the probable costs (see Appendix B). The department surveyed a wide variety of stakeholders groups representing:

- Large, medium, and small water systems;
- Certified operators from large, medium, and small water systems;
- CCSs;
- BATs;
- Satellite system management agencies; and
- Contract operators.

Throughout the rule making process, the department has given several presentations to discuss the changes and get feedback from stakeholders at conferences and meetings at various locations across Washington for the following groups between Fall 2009 and Fall 2013.

Stakeholder Groups
American Water Works Association-Pacific Northwest Section Trustees & Cross-Connection Control Committee
Association of Boards of Certification
Association of Washington Cities/Counties
Certified operators, BATs, and CCCs
Evergreen Rural Water of Washington
Group A public water systems
Rural Community Assistance Corporation
Spokane Regional Cross-Connection Control Chapter
U. S. EPA – Region 10 (Alaska, Idaho, Oregon, and Washington)
Washington Association of Sewer and Water Districts
Washington Certification Services
Washington Environmental Training Center
Washington Operator Workshop
Washington Public Utility District Association
Washington Water Utility Council
Water and Wastewater Operators of Washington
Western Washington Cross-Connection Prevention Professionals (The Group)

Based on the evaluation, the proposed rule sections identified in Table 1 are non-significant under RCW 34.05.328(5)(c) and do not require analysis.

**Table 1: Sections determined to be non-significant**

The following table identifies proposed rule sections the department has determined are exempt from analysis based on the exemptions provided in RCW 34.05.328(5)(b) and (c):

<b>WAC Section and Title</b>	<b>Description of Proposed Changes</b>	<b>Rationale for Determination of Non-Significance</b>
WAC 246-292-001 Purpose	Clarifies the existing purpose of the chapter.	The changes conform to recent changes in chapter 70.119 RCW (SHB 1283) and do not set standards that subject a person to a penalty or sanction.
WAC 246-292-010 Definitions, abbreviations, and acronyms	Definitions added where necessary, deleted when not used anymore, and modified to be consistent with other drinking water rules.	Definitions by themselves do not create a significant change. Those that create a significant change when implemented are identified and analyzed in context as part of the section-by-section analysis.
WAC 246-292-031 Duties of a certified operator	Removes redundant language, and clarifies existing requirements.	Changes in this section are editorial and clarifying and do not change underlying existing requirements.
WAC 246-292-040 Classification of public water systems	Adds specificity about how the department classifies public water systems.	Changes in this section are editorial and clarifying and do not change underlying existing requirements.
WAC 246-292-060 Minimum education and experience requirements to become a certified operator.	Clarifies minimum education and experience requirements for department approval.	Aligns with EPA federal operator certification requirements.
WAC-246-292-070 Application and examination	Reflects new procedures used for processing applications and processing exams because of technological improvements.	Changes in this section modify procedures and are editorial without changing underlying existing requirements.
WAC 246-292-075 Reciprocity	Clarifies requirements to receive a reciprocal certification based on equivalent Washington State standards.	Changes in this section are editorial and modify procedures without changing underlying existing requirements.
WAC 246-292-085 Grandparented certification	Makes editorial changes to clarify language.	Changes in this section are editorial and clarifying and do not change underlying existing requirements.

WAC 246-292-090 Renewal of certificates	Specifies dates for submittal of renewal-related materials. Moves professional growth requirements to new Section 095.	Changes in this section are editorial and modify procedures without changing underlying existing requirements.
NEW SECTION WAC 246-292-095 Professional growth	Identifies professional growth requirements for certified operators	Creates a new section that contains existing requirements in section 090. Makes editorial and clarifying amendments to existing requirements.
WAC 246-292-100 Revocation and suspension	Modifies conditions under which the department may revoke or suspend an operator's certificate.	Changes conform to existing language in chapter 70.119 RCW.
NEW SECTION WAC 246-292-105 Certification denial	Creates a new section to establish departmental procedures regarding applicants that do not meet the minimum standards to become certified.	This section adopts departmental procedures that are exempt from the analysis requirements in RCW 34.05.328(5)(c)(i).
WAC 246-292-110 Enforcement	Makes minor editorial changes to clarify language.	Changes in this section are editorial and clarifying and do not change underlying existing requirements.
REPEALED SECTION WAC 246-292-160 Water works certification fees	Deletes the requirements from Section 160 and adopts the existing requirements into a new section 990.	
NEW SECTION WAC 246-292-990 Certified operators and public water system certification fees	Creates a new section to replace the existing section 160 and includes editorial changes.	Changes in this section are editorial and clarifying and do not change underlying existing requirements.

The remaining nine proposed sections are significant under RCW 34.05.328(5). The following section-by-section analysis evaluates the probable benefits and costs of each section deemed significant.

## Section-by-section analysis

### WAC 246-292-020, Public water system requirements

The proposed rule section includes one significant requirement. The proposal specifies that a purveyor shall report all mandatory certified operator in responsible charge positions to the Department of Health (department) within thirty days of beginning operations of a public water

system, or when a position is vacant. When a new public water system begins operations, the Group A rule requires that the purveyor operate the system in accordance with the operations and maintenance program established in their water system plan or small water system management program. One element of the plan is to have a certified operator on staff to carry out the operations and maintenance activities of the system.

The department's current Waterworks Operator Program Guideline (Guideline) specifies that if the operator in responsible charge leaves a position for any reason, the system must report the vacancy to the department and fill the vacant position within thirty days. The Guideline also states that the system must hire a certified operator at the appropriate classification level, or a contract operator, or have an individual that is working for the system apply for and receive a temporary certification from the department. The proposed rule adopts the language from the Guideline as a requirement. This proposal gives the purveyor three options to choose from to obtain a certified operator within thirty days of starting operations or when a mandatory position is vacated.

Costs: We expect systems to incur no implementation costs from this proposed rule since systems are required to have a certified operator. Setting a timeframe of thirty days to notify the department of a vacancy and to obtain a certified operator is consistent with the department's Guideline and current program practice and does not impose an additional cost.

Benefits: Operator certification is critical for the protection of public health and the maintenance of safe, optimal, and reliable operations of a system's water treatment and distribution facilities. The goal of the waterworks operator certification program is to require that systems have skilled professionals to oversee the delivery of safe and reliable drinking water. Setting a timeframe to fill vacated positions helps systems know what is required of them and provides the department a specific regulatory basis for enforcement, and better protection for public health.

The proposed rule also includes one non-significant requirement. The proposal prohibits a purveyor from requiring an action or correction that is inconsistent with the operator's experience, skills, and abilities or level of certification. This proposed rule is consistent with WAC 246-292-032 and 246-292-033 which states that the duties of a certified operator or CCS do not relieve a purveyor from their responsibility to comply with the Group A rule.

### **WAC 246-292-032, Duties of a certified operator in responsible charge**

The proposed rule section includes two significant requirements. The proposal specifies that a certified operator in responsible charge:

1. Must be available twenty-four hours per day, seven days per week, and able to take action within two hours; and
2. Is responsible for completing or overseeing specific duties.

The proposed rule also includes one non-significant requirement. The proposal clarifies that the duties of a certified operator do not relieve a purveyor of the responsibility to comply with the requirements in the Group A rule.

## **1. Availability**

The existing rule requires a “designated” certified operator to be available, and defines available as being, “on-site or able to be contacted immediately by telephone or other electronic communication twenty-four hour per day, every day, and able to initiate appropriate action in a timely manner.” The department’s current Waterworks Operator Program Guideline (Guideline) specifies that this term means being available twenty-four hours per day (voicemail, cell phone).

The proposed rule adopts the language from the Guideline as a requirement and clarifies the intent. Under the proposed rule, the certified operator in responsible charge or designee must be available twenty-four hours per day, every day, and able to initiate appropriate action within two hours of contact.

Although the proposed rule requires the certified operator in responsible charge or the designee to respond within two hours of contact, it also provides flexibility to allow the operator to determine the “appropriate action.” The proposed rule does not obligate a certified operator to be on-site at all times to resolve problems. A certified operator in responsible charge can direct other qualified staff, contractors, or other individuals to make necessary repairs or resolve problems to address an issue.

Costs: Under this section, some water systems will not incur additional costs. For example, their contract operator may be able to enlist individuals that live on the system to be available to complete selected tasks in their absence (such as turning the power off, or turning on an emergency generator). Other systems may enter into agreements with other systems to provide cross coverage (you cover for me, and I cover for you). There will be some water systems, however, that will incur costs because they may elect to have staff “on-call” to comply with the proposed requirement. Based on results from a survey the department conducted, the probable costs under this scenario range between \$100 to \$360 per week, depending on the wage rates and union contract provisions.

Benefits: The proposal requires that public water systems will have a certified operator available at all times in case of emergency. The two-hour performance standard for availability provides for a response time to address problems quickly to protect the public’s health.

## **2. Duties**

The proposed rule specifies the duties of a certified operator in responsible charge to include the following:

- Conduct water quality monitoring;
- Analyze results of instrument readings, lab test results, and adjust treatment processes;
- Maintain, field test, inspect equipment, and facilities;
- Recordkeeping and reporting;
- Implement a Cross-Connection Control program;
- Take actions in an emergency and follow departmental directives;

- Cooperate during special purpose investigations and sanitary surveys;
- Provide records to the department on request; and
- Notify the department within thirty days when the certified operator starts or stops operating a water system.

Costs: All requirements identified in this proposal exist in the Group A rule for public water system purveyors. And, a certified operator in responsible charge is included in the definition of a “purveyor”. Because the proposal does not establish new requirements, there are no costs associated with this significant change.

Benefits: Although the proposed requirements have existed for purveyors in the Group A rule, identifying the responsibilities of the certified operator in responsible charge in this rule chapter establishes expectations for operators and a linkage to their certificates. Establishing clear roles and responsibilities, and accountability improves public health protection.

### **WAC 246-292-033, Duties of a CCS**

The proposed rule has significant requirements new to this chapter for a Cross-Connection Control Specialist (CCS) to develop and implement a Cross-Connection Control (CCC) program as required in WAC 246-290-490. The proposed rule identifies specific duties that a CCS must perform. The proposal includes one non-significant requirement by clarifying that the duties of a CCS do not relieve a purveyor of the responsibility for complying with the CCC requirements in the Group A rule.

WAC 246-290-490 requires public water system purveyors to develop and implement CCC programs and to provide a certified CCS to perform CCC program duties. Although WAC 246-290-490 establishes requirements for purveyors, it does not provide the department with direct regulatory oversight of CCS duties. In 2009, the legislature provided authority in Substitute House Bill (SHB) 1283 to the department to certify and regulate CCSs. The proposed rule establishes and clarifies specific CCS duties and is consistent with the intent of SHB 1283.

The proposed rule requires a CCS to:

- Assess cross-connection hazards;
- Determine appropriate backflow prevention;
- Inspect backflow preventer installations;
- Investigate and respond to backflow incidents;
- Maintain CCC records and submit reports to the department including CCC annual summary reports and backflow incident reports;
- Take corrective actions when a consumer fails to comply with a purveyor’s CCC requirements;
- Review inspection and field test reports for backflow preventers and take follow-up action to resolve incomplete, erroneous, or fraudulent reports; and
- If applicable, determine if granting an exception to mandatory premises isolation is appropriate, complete and sign an exception form, and submit to the department if requested.

The proposed rule clarifies that a CCS's responsibilities may include inspecting air gaps and backflow prevention assemblies as allowed, and if conducted, report results as required in WAC 246-292-034(4).

Costs: Since 1970, public water systems have had to develop and implement a CCC program as required in WAC 246-290-490. We expect systems that have active CCC programs to incur no implementation costs from this proposed rule. The CCS duties in this proposal are based on WAC 246-290-490 and the proposed rule reflects current industry practice.

The proposed rule does not establish new requirements for a purveyor or for a CCS to develop and implement a CCC program. A purveyor must comply with WAC 246-290-490 and designate a CCS to develop and implement a CCC program. The Group A rule mandates that CCSs perform the duties specified in this section except for review of inspection and field test reports for backflow preventers that protect the public water system, and follow-up action to resolve incomplete, erroneous, or fraudulent reports [WAC 246-292-033(2)(h)]. Although not specified in the Group A rule, review of test reports and follow-up action should be part of the purveyor's quality assurance quality control (QA/QC) program required in WAC 246-290-490(3)(g).

Purveyors that have a QA/QC program will likely incur no additional costs from this proposal. Purveyors that don't have a QA/QC program will incur costs to pay a CCS to review inspection and field test reports. The cost to each purveyor will vary depending on the number of backflow preventers that protect the public water system and the number tested per calendar year. The larger the system, the greater the number of backflow preventers installed to protect the public water system. These backflow preventers will require initial and annual inspections and testing.

The amount of time needed to review test reports may vary depending on the size of the public water system. For larger systems, a CCS's review may only take a minute per test report. For smaller systems, a CCS's review may take three to five minutes per test report. The variability in review time between large and small systems is due to the CCC program software that large systems typically use. The software checks for errors on test reports and enables the CCS to review reports quickly and efficiently.

For example, the City of Bellevue (a large public water system) receives annual test reports for over 11,000 backflow preventers. Bellevue estimates that it will cost between \$7,500 and \$10,000 per year to have a CCS review each test report. With more than 100,000 service connections, the cost per customer would be less than \$.04 per year. The department assumes that other large water systems would incur similar costs.

Small public water systems primarily serve residential connections. Irrigation systems on the consumer's premises pose the most common cross-connection hazard for residential connections. Irrigation systems require backflow prevention to protect the public water system from contamination.

For a small system, the highest cost scenario would occur when each residence has an irrigation system with an associated backflow prevention assembly. For the highest cost scenario for a



small system with 100 service connections, assume that the CCS has to review 100 test reports, and each report takes three to five minutes to review. We estimate the CCS would take a total of five to eight hours to complete the reviews. The estimated cost to the system would be \$225 to \$360 per year. For this scenario, the estimated cost per customer would be \$2.25 to \$3.60 per year. In contrast, small systems serving residences without irrigation systems or other cross-connection hazards requiring backflow prevention assemblies would incur minimal to no added costs.

Benefits: Although the Group A rule has included CCC requirements for purveyors since 1970, the department lacked the regulatory authority to include these requirements in this chapter. By identifying and clarifying the duties of CCSs, individuals certified as CCSs will understand what is required of them. Establishing clear roles and responsibilities helps to ensure statewide consistency in CCC program implementation and provides the department a specific regulatory basis for enforcement, and better protection for public health.

### **WAC 246-292-034, Duties of a BAT**

The proposed rule has significant requirements new to this chapter for a Backflow Assembly Tester (BAT) to inspect, field test, maintain, and repair backflow prevention assemblies, backflow prevention devices, and air gaps that protect the public water system from contamination. It also requires BATs to report results of inspections and field testing as required in WAC 246-290-490 (7). The proposed rule identifies specific duties that a BAT must perform.

The current rule requires purveyors to ensure that a BAT is responsible for inspecting, field testing, and monitoring backflow prevention assemblies in accordance with WAC 246-290-490. WAC 246-290-490 (7) requires purveyors to ensure that a BAT test backflow prevention assemblies for proper operation. It also requires purveyors to ensure that BATs inspect air gaps, and backflow prevention assemblies for correct installation and approval status. In addition, WAC 246-290-490 requires testing using procedures acceptable to the department, and documentation and reporting of results. Although WAC 246-290-490 establishes requirements for purveyors, it does not provide the department with direct authority or regulatory oversight of a BATs duties.

In 2009, the legislature provided authority in Substitute House Bill (SHB) 1283 to the department to certify and regulate BATs. The proposed rule establishes and clarifies specific BAT duties and is consistent with the intent of SHB 1283.

The proposed rule establishes the duties of BATs. Under the proposal, a BAT must:

- Be properly equipped and capable of using a field test kit, all tools and other equipment needed to conduct inspections and field tests;
- Use proper field test procedures that meet the requirements in WAC 246-290-490(7)(d);
- Accurately perform inspections and field tests, and interpret results;
- Accurately record results on a backflow preventer inspection and field test report and submit to the owner of the backflow preventer and purveyor;

- Use field test kits meeting the standards established in the Manual of Cross-Connection Control published by the University of Southern California (USC Manual), 10<sup>th</sup> Edition (2009);
- Have field test kits evaluated, checked for accuracy, and calibrated at twelve month intervals according to the standards in the USC Manual;
- Submit documentation to the purveyor verifying accuracy of the field test kit and verifying current BAT certification status when requested by the purveyor;
- Retain or restore the manufacturer's design, material, and operational characteristics of the backflow preventer, including using original manufacturer replacement parts; and
- Be a certified plumber as required in chapter 18.106 RCW, if applicable.

The proposed rule clarifies the specific responsibilities of BATs in detail. The current rule is limited in scope by only requiring purveyors to ensure that a BAT is responsible for inspecting, field testing, and monitoring backflow prevention assemblies in accordance with WAC 246-290-490 and provides no other specific responsibilities. WAC 246-290-490 indirectly addresses duties for BATs by requiring a purveyor to ensure that BATs conduct inspections and field tests using procedures acceptable to the department necessary to document that the backflow preventers are properly operating to protect the public water system from contamination. The proposed rule establishes standards that apply specifically to BATs based on current industry standard practices.

Costs: The equipment required to inspect and field test backflow preventers includes, at a minimum, a field test kit, including fittings and connectors, and other tools needed to inspect and field test backflow preventers. The cost of the field test kit meeting the standards in the USC Manual ranges from \$750 to \$1,000 for a basic analog model. The cost of the fittings and connectors could be an additional \$1,000. Annual verification and recalibration (if needed) costs are between \$75 and \$90. If a field test kit is found to be inaccurate and must be repaired, the most commonly required field test kit repair typically costs between \$40 and \$270. Even though the requirements are new, BAT's have been incurring these costs as a standard business cost since purveyors require this as part of their QA/QC programs as required in WAC 246-290-490.

The proposed rule will also result in BATs conducting inspections and field tests of backflow prevention assemblies. Such inspections and field tests typically take fifteen to sixty minutes. The requirements under the proposed rule will result in BATs conducting inspections of air gaps. Such inspections may take up to fifteen minutes. In addition, BATs incur costs for travel time and set-up. Travel time and set-up can be substantial. For example, if an assembly is located in an underground vault, the BAT will have to comply with confined space safety requirements. Typically, BATs charge \$30 to \$75 for a basic air gap inspection or assembly field test. For more complex services, such as assembly repair, BATs charge assembly owners \$50 to \$75 per hour.

A percentage of BATs conducting inspections and field tests already have the equipment needed to perform their job duties and follow current industry practice regarding annual verification and recalibration, and follow guidance such as the USC Manual, 10<sup>th</sup> Edition (2009). For these individuals, the department assumes that the cost of this rule will be low or negligible. There will be other BATs however, that are using field test kits that do not meet the standards in the USC Manual. If so, to continue testing, the BATs will have to purchase new field test kits. The

department estimates that field test kits and fittings will cost between \$1,750 to \$2,000. The department assumes that most BATs will not incur new costs because of this proposal.

Benefits: Although the current rule and the Group A rule included limited BAT requirements since the 1970s, the department lacked the regulatory authority to include detailed requirements in this chapter. By identifying and clarifying the duties of BATs, individuals certified as BATs will understand what is required. Establishing clear roles and responsibilities helps to ensure statewide consistency in the inspection and testing of backflow preventers and provides the department a specific regulatory basis for enforcement.

In addition, the proposal helps support purveyor's CCC programs and provides them a basis for enforcement at the local level. Together these requirements should better protect public health. Historically the department has received complaints against BATs and the lack of regulatory authority and detailed regulations has hindered the department's ability to take appropriate enforcement actions such as revocation or suspension.

Clearly defining the duties of BATs improves public health protection by creating a consistent minimum set of duties and standards for BATs inspecting and testing backflow preventers that protect public water systems. The proposed rule supports purveyor's CCC programs by establishing expectations for BATs inspecting, field testing, and reporting so that backflow preventers function properly to prevent contamination of the public water system from cross-connections.

### **WAC 246-292-036, Backflow preventer inspection and field test report content**

The proposed rule has significant new requirements and sets the minimum requirements for the content of backflow preventer inspection and field test reports. Under the proposal, a Backflow Assembly Tester (BAT) must complete a backflow preventer inspection and field test report meeting the minimum content requirements as specified in this section. Under this proposal a Cross-Connection Control Specialist (CCS) inspecting an air gap must complete a backflow preventer inspection and field test report as required in WAC 246-292-033 (4).

The current rule does not address the report content. WAC 246-290-490 (7) does require the results of backflow preventer inspections and field tests to be documented and reported to the purveyor. Although the Group A rule does not *directly* address report content, the rule *indirectly* addresses the content through the records that purveyors must maintain under WAC 246-290-490(3)(j).

The proposed rule establishes that BATs are responsible for inspection and testing backflow preventers. The proposed rule establishes how BATs must document the results of their field work. For backflow preventers that protect the public water system, the BAT must submit the field test report to the purveyor and to the owner of the backflow preventer. This proposed rule provides the department with direct regulatory oversight and consistency of the information BATs report to purveyors.

The backflow preventer inspection and field test report must contain:

- Facility and hazard information;
- Information about the backflow prevention assembly or device;
- Installation information;
- Results of inspections and field tests;
- Maintenance and repair information;
- Field test kit information;
- Results of air gap inspections;
- Remarks;
- BAT name and certification number;
- Date the work was performed; and
- Signature of BAT and statement certifying the work.

Costs: The proposed rule requires BATs to provide detailed report information of backflow preventer inspections and field tests. The department analyzed the costs of performing the tasks related to providing the information on the test report under WAC 246-292-034.

The department surveyed BATs on the impacts of the proposed rules. Of those who responded, BATs indicated that they are already providing purveyors with inspection and field reports with the elements included in the proposed rule. They indicated that they are currently using standardized test reports developed by several Regional cross-connection groups in Washington. These reports contain the proposed minimum elements. BATs indicated that they are presently spending between five and ten minutes to accurately and completely fill out a backflow preventer inspection and field test report that meets the requirements of the proposed rule.

Based on this input, the department assumes that BATs will not incur additional costs to implement the proposed rule.

Benefits: Currently, the content of inspection and field test reports submitted to purveyors varies even though most BATs already provide the reporting elements in the proposed rule. Currently, we have no requirements in this chapter or the Group A rule that address this issue. Clearly defining the content of test reports addresses the need for creating a statewide minimum standard. The goal of this proposal is for all purveyors to get consistent and complete information needed to assess the performance of backflow preventers that protect the public water system. Purveyors need this information to implement their Cross-Connection Control (CCC) programs effectively and protect public health. By establishing minimum requirements for test reports, the department is supporting purveyors' CCC programs, which are required in WAC 246-290-490.

Historically the department has received complaints against BATs for submitting incomplete, erroneous, or fraudulent test reports. The lack of detailed regulations has hindered our ability to take appropriate enforcement actions such as revocation or suspension. The proposed requirements will provide the department a basis for enforcement actions against BATs that submit poor quality or fraudulent test reports to purveyors.

The department plans to develop an example of a test report that meets the minimum content requirements of the proposed rule. The department plans to post this test report example on the department's website for BATs and purveyors.

## **WAC 246-292-050, Public water system minimum operator certification requirements**

The proposed rule includes three significant changes to the minimum operator certification requirements. The proposal:

1. Removes a basic treatment operator (BTO) rating for Class 1 water treatment plants; and
2. In addition to the requirement in WAC 246-292-050 (1) and (2), which requires an operator in responsible charge to be classified at the minimum level identified in Tables 3 and 4, subsection (3) allows a certified operator in responsible charge for a major segment of a water system to be certified at one level lower than the minimum classification of the water system. Subsection (4) allows an assigned operator at one level lower than the certified operator in responsible charge for a major segment of a water system.

### **1. Treatment plants no longer rated to require a BTO**

Under current rules, a water treatment plant with a Class 1 rating that provides water to fewer than 1,000 service connections requires a BTO for operations. Current rules require a Water Treatment Plant Operator (WTPO) 1 to operate a Class 1 rated treatment plant that provides water to 1,000 or more service connections.

The proposed rule would require a WTPO 1 to operate any public water system with a Class 1 water treatment plant, regardless of the number of service connections. The proposal allows a BTO to be reclassified to a WTPO 1. Further explanation of the change is outlined in WAC 246-292-086.

Costs: There are no costs associated with re-ranking BTO facilities to the WTPO 1 classification. The conversion of a BTO facility to a WTPO 1 facility will not result in a practical change in duties and responsibilities, which should not result in changes in certified operator wages.

Benefits: The proposed change provides better public health protection and benefits water system purveyors. Purveyors benefit because they will have a larger candidate pool for employment. For example, a current purveyor with a Class 1 water treatment plant that requires a BTO to operate it cannot hire a certified operator with a WTPO 1 through WTPO 4 certification. That restriction reduces many potential certified operators from qualifying to operate the treatment plant. Certified operators holding a WTPO 1 through WTPO 4 certification have demonstrated they have the technical knowledge and capability to operate a BTO facility. In fact, WTPO facilities are generally more complex than BTO-rated facilities. The proposed change removes the restriction and allows a purveyor to hire a highly qualified WTPO certified operator to operate their system.

Additional public health benefits result from the broader pool available for water system operation. In addition, the WTPO 1 through WTPO 4 testing is based on national standards, so more qualified applicants from other states will be able to qualify to be a certified operator in Washington.

## **2. Certified operators in responsible charge for a major segment and an assigned operator**

In addition to the requirements in WAC 246-292-050 (1) and (2), which requires an operator in responsible charge to be classified at the minimum level, the proposed rule allows a certified operator in responsible charge for an operating shift outside of regular operating hours or a major segment of a treatment plant or distribution system to be certified at one level lower than the classification of the plant or system.

The proposal, under subsection (3) (b), also allows a purveyor to assign an operator at one level lower than the operator in responsible charge of a major segment if the following written procedures are in place:

- Identify which operational decisions can be made that are consistent with assigned operator's experience, skills, and abilities;
- Identify the conditions in which the assigned operator must consult with the certified operator in responsible charge and contact information; and
- The date and signatures of the operator in responsible charge and the assigned operator.

Costs: There is no cost associated with this significant change.

Benefits: The proposal will reduce salary costs for purveyors. For example, a purveyor of a water system with a Class 3 distribution system may assign a Water Distribution Manager (WDM) 2 to be the certified operator in responsible charge for a major segment such as water quality. A WDM 2 salary is generally less than that paid to a WDM 3. The assigned certified operator will generally be paid less than the operator in responsible charge of a major segment. Respectively, both must have the skill set and abilities to properly operate the system within their assigned duties to properly protect public health.

The proposal has a non-significant change that adds the elements from the definition of "state significant non-complier" into this section. One element of the definition "failure to comply with waterworks operator certification requirements" is added from the Group A rule because it was a new requirement of the federal groundwater rule adopted by the department in 2010.

## **WAC 246-292-055, Minimum requirements for contract operators**

The proposed rule section includes two significant changes to the minimum requirements for contract operators:

1. Contract operators must take appropriate action within two hours of contact for every public water system that the operator is under contract with; and

2. Contracts between water systems and contract operators must include, at a minimum, all duties under WAC 246-292-032.

### **1. Requiring contract operators to meet a two-hour response time**

The existing rules require a contract operator to be available twenty-four hours per day, and defines available as being “on-site or able to be contacted as needed to initiate the appropriate action in a timely manner.” The department’s current Waterworks Operator Program Guideline (Guideline) specifies that being available means that a contract operator must be able to take action within two hours of contact.

The proposed rule adopts the language from the Guideline as a requirement. Under the proposed rule, the contract operator must be on-site or able to be contacted immediately by telephone or other electronic communication twenty-four hours per day, every day, and able to initiate appropriate action within two hours of contact.

Although the proposed rule requires the contract operator to respond within two hours, it also provides flexibility to allow the operator to determine the “appropriate action.” The proposed rule does not obligate a contract operator to be on site at all times to resolve problems that come up. A contract operator can direct other qualified staff to make necessary repairs or resolve problems to address an emerging issues.

Costs: The probable costs of the proposed requirements, which are between \$100 - \$360, are analyzed in WAC 246-292-032.

Benefits: The proposal requires that public water systems that employ a contract operator will have a certified operator available at all times in case of an emergency. The proposal provides flexibility to allow the operator to determine the “appropriate action” and does not obligate the operator to be on-site at all times to resolve problems. The contract operator can direct other qualified staff to make necessary repairs or resolve problems to address an emerging issue. The two-hour performance standard for availability provides for a limited response time to address problems quickly to protect the public’s health.

### **2. Establishing minimum requirements for contract operators**

The proposed rule establishes requirements between a contract operator and a public water system. The requirements are the same as the requirements for a certified operator in responsible charge under WAC 246-292-032:

- Conduct water quality monitoring;
- Analyze results of instrument readings and lab test results and adjust treatment processes;
- Maintain, field test, inspect equipment and facilities;
- Recordkeeping and reporting;
- Implement a Cross-Connection Control program;
- Take actions in an emergency and follow departmental directives;
- Cooperate during special purpose investigations and sanitary surveys;

- Provide records to the department on request; and
- Notify the department when the contract operator initiates or terminates operations of a water system within thirty days.

Costs: There are no costs associated with the proposed requirements. This is analyzed in WAC 246-292-032.

Benefits: Although the proposed requirements have existed for purveyors in the Group A rule, identifying the responsibilities of the contract operator establishes expectations and a linkage to their certificates. Establishing clear roles and responsibilities, and accountability improves public health protection.

### **WAC 246-292-080, Public water system temporary operator certification**

The proposed rule includes the following non-significant changes and clarifies:

- That the department issues a temporary certificate to the operator and not the water system so that the rule is consistent with statute;
- Requirements for a water system to qualify for obtaining an operator with a temporary certificate; and
- The required documentation that an applicant must submit to obtain a temporary operator certification.

The proposed rule includes a significant change that authorizes the department to issue temporary operator certificates for a timeframe less than one year for up to:

- Sixty days for water systems using a surface water or groundwater under the direct influence of surface water (GWI) source; and
- One hundred twenty days for transient noncommunity (TNC) systems that have violated the Group A rule.

Water systems using surface water or GWI sources must provide treatment because of the high risk of microbial contamination associated with these water sources. The proposed rule authorizes the department to issue a temporary certificate for up to sixty days for operators of these systems. The sixty day limit allows enough time for an operator currently working for the system that meets the minimum education and experience requirements to apply for a permanent certificate, take and pass an examination, and receive the certificate from the department. If the system does not have an operator that meets the minimum education and experience requirement to become certified, the sixty day limit allows enough time for the system to recruit and hire a certified operator.

Under normal operating conditions, a TNC system is not required to have a certified operator. TNC systems that are out of compliance with the Group A rule are considered a public health risk because of the nature of the violations. When such a system is determined to be out of compliance with the Group A rule meeting any of the criteria in WAC 246-292-050(2)(c), the system must hire a certified operator. The proposal specifies that the department will issue temporary certificates for up to one-hundred twenty days to operators of those systems. The



department is allowing a TNC system to have a temporarily certified operator for up to one-hundred twenty days because the nature of the violations are not as high of a public health risk as a system that does not have a certified operator that uses a surface water or GWI source. The additional time (one-hundred twenty days) will allow the system to have an existing employee gain the experience necessary to meet the minimum requirements to become a permanently certified operator, or to recruit and hire a certified operator.

The time limits will require temporary operators to become permanently certified at the level for which the temporary certification is issued - within a shorter time-period of less than one year as specified in the current rule. For high public health risk situations, where an operator with a temporary certificate does not complete the certification requirements within the time-period, the purveyor will be required to hire a certified operator.

Costs: There is no cost associated with this change. This proposed change does not affect the underlying certification requirements except to put a shorter timeframe in place for high-risk water systems. The affected public water systems are already required to have certified operators. The shortest timeframe (60 days) is enough time for an operator to take and pass the required examination to become permanently certified.

Benefits: The proposal reduces the period of time for which temporary certificates will be issued to operators of water systems with higher public health risks. The goal is to quickly transition high-risk water systems to either retain the temporary certified operator who becomes a permanently certified operator by the time the temporary certificate expires, or hire a permanently certified operator. The public is better protected because the temporary certification period is shorter, which ensures that the water system is operated by a qualified certified operator.

## **WAC 246-292-086, Certified BTO**

Under the proposed rule, the department will no longer rate Class 1 treatment plants as requiring a certified Basic Treatment Operator (BTO), and changes the certification level to a Water Treatment Plant Operator (WTPO) 1 (see WAC 246-292-050). The proposed rule describes the process in which individuals holding a BTO certificate may be reclassified into the WTPO classification series, at their discretion as follows:

- An individual holding a BTO certificate who has twelve months experience operating a Class 1 water treatment plant will be issued a WTPO 1 certificate;
- An individual holding a BTO certificate who is currently operating a Class 1 water treatment plant, and who does not have sufficient operating experience to qualify as a WTPO 1, will be provided with a temporary certificate for up to a year. After that year, the individual will have the necessary water treatment plant operating experience and will be issued a permanent WTPO 1 certificate;
- An individual holding a BTO certificate that does not have at least twelve months experience operating a Class 1 water treatment plant may obtain a WTPO-OIT (operator in training) certificate until the individual obtains the necessary experience to be classified as a WTPO 1; or

- A certified BTO may chose to retain their BTO certificate.

Costs: There are no costs associated with this change. The department will not charge a fee for the transition from a BTO to a WTPO. No additional professional growth will be required for the operators to maintain their level of certification.

Benefits: Under the proposed rule, the elimination of the BTO classification will align Washington State's classification of the water treatment plants with other states. At the same time, the classification system will be simplified because the BTO classification has not been well integrated into the certified WTPO series as a whole. Both certified operators and water system purveyors will benefit by expanding the range of water treatment plants that operators are qualified to operate.

There will be no reduction in public health protection because of the transition to the WTPO series. In fact, the pool of applicants will increase to allow public water systems to hire well-qualified WTPO's and those BTO's transitioning to this classification series.

### **Cost and Benefit Summary**

The proposed rules revise existing requirements, and in some cases creates new requirements for certified operators, Group A public water systems, Cross-Connection Control Specialists, and Backflow Assembly Testers. These changes clarify federal and state regulations. The rules also incorporate department guidance and long-standing program practices and procedures into rule. Collectively, these changes allow the department and the regulated parties to complete their work more efficiently. Although there are various costs identified in the section-by-section analysis, the benefit of establishing competent technical operation of our state's public water systems toward the goal of providing safe and reliable drinking water to the residents of the state outweigh these costs. Therefore, the total probable benefits of this rule exceed the total probable costs.

## **Section 6: What alternative versions of the rule were considered? Is the proposed rule the least burdensome approach?**

*RCW 34.05.328(1)(e) requires that agencies determine, after considering alternative versions of the rule and this analysis, that the rule being adopted is the least burdensome alternative for those required to comply.*

The Department of Health (department) considered alternate versions of the rule. In considering each requirement, the department chose the version that is the most protective of public health and the least costly for certified operators and public water systems, while meeting the federal and state mandates of the underlying statutes.

- Under the current rule, an operator must be available twenty-four hours per day, and defines available as being “on-site or able to be contacted as needed to initiate the appropriate action in a timely manner.” Under the proposed rule, the certified operator in responsible charge or designee must be available twenty-four hours per day, every day, and able to initiate appropriate action within two hours of contact. The proposal is more protective of public health because an operator is required to begin resolving problems within a specified period of time. The department considered allowing a four-hour response time. The department chose a two-hour response time because the proposal allows an operator to be contacted by telephone or other electronic communication. This provides flexibility so that an operator does not have to be on-site at all times in case an issue or problem arises. The operator can instruct other qualified persons via telephone or other electronic device to make necessary repairs within a shorter timeframe so that the public’s health is better protected.
- Under the current rule, a certified operator in responsible charge of an operating shift may be certified at one level lower than the classification of the treatment plant or distribution system. The department is expanding this option to water systems that have major segments that are distinct portions as designated by the system such as water transmission, water quality, or field operations. The department recognizes that operators at one level lower than the certified operator in responsible charge can adequately perform their job duties with proper oversight by the operator in responsible charge. This change will reduce salary costs for purveyors without reducing public health protection.
- In addition to the change above, the department is allowing a purveyor to assign an operator at one level lower than the operator of an operating shift or major segment provided that written procedures are in place that clearly define duties and when to consult a higher level operator. This change will reduce salary costs for purveyors without reducing public health protection.

Therefore, the department determines the rule changes are the least burdensome alternative for those required to comply that achieves the goals and specific objections of the underlying statutes.

## **Section 7: Does the rule require those to whom it applies to take an action that violates requirements of another federal or state law?**

*RCW 34.05.328(1)(f) requires that agencies determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.*

No. The rule does not require those to whom it applies to take an action that violates requirements of federal or state law.

**Section 8: If required by federal or state law, does the rule impose more stringent performance requirements on private entities than on public entities?**

*RCW 34.05.328(1)(g) requires that agencies determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.*

No. The rule will not impose more stringent performance requirements on private entities than on public entities. The changes in this rule apply equally to the classification and operation of all public water systems, whether they are publicly or privately owned.

**Section 9: Does the rule differ from any federal regulation or statute applicable to the same activity or subject matter? If so, is the difference justified by an explicit state statute or by substantial evidence that the difference is necessary?**

*RCW 34.05.328(1)(h) requires agencies to determine whether the rule differs from any federal regulation or statute applicable to the same subject matter.*

The rule does not differ from any applicable federal regulation or statute. The rule changes were developed using the Safe Drinking Water Act, federal operator certification requirements, state statute (chapter 70.119 RCW), and Substitute House Bill 1283. U.S. Environmental Protection Agency staff determined that the rule changes meet the federal standards.

**Section 10: Has the rule been coordinated with other federal, state, and local laws applicable to the same activity or subject matter?**

*RCW 34.05.328(1)(i) requires agencies to determine whether the rule has been coordinated to the maximum extent practicable with other federal, state, and local laws applicable to the same activity or subject matter.*

Yes. The Department of Health (department) has coordinated with U.S. Environmental Protection Agency (EPA) and the department's Waterworks Advisory Committee as well as extensive work with stakeholder groups during the development of this proposal. The proposed rule changes have been coordinated to the maximum extent practical with other federal and state laws applicable to the same subject matter:

- Chapter 70.119 RCW, Public water supply systems – Operators;
- Safe Drinking Water Act Amendments of 1996;
- EPA final guidelines for the certification and recertification of the operators of public water systems (64 F.R. 5916 February 5, 1999);
- EPA final additions to the final guidelines for the certification and recertification of the operator of public water systems (66 F.R. 19939 April 18, 2001);
- Chapter 246-290 WAC, Group A public water supplies; and
- Association of Boards of Certification (standards for testing, certification, continuing education, and reciprocity).

## **Appendix A: Waterworks Advisory Committee participants**

### **Certified Water Distribution Manager (WDM)**

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### **Certified Water Treatment Plant Operator (WTPO)**

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### **Org. Representing Small Water System Interests**

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### **Certified Cross Connection Control Specialist (CCS)**

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### **American Water Works Association**

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### **Employer of a Certified Waterworks Operator**

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### **Certified Backflow Assembly Tester (BAT)**

Vacant – New position

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### Individuals Providing Information for the Significant Analysis

#### Utility representatives

1. Jacki Asters	City of Longview
2. Tyler Himmelman	City of Bellevue
3. Ernie Klimek	City of Port Angeles
4. Sean Bauer	City of Kent

#### Cross Connection Control Specialists, Backflow Assembly Testers and Manufacturers

1. Steve Coke	City of Olympia
2. Dana Lind	City of Ellensburg
3. Bill Roe	Roe Backflow Testing
4. John Purzyski	BAVCO (Backflow Apparatus & Valve Company)
5. Corey Porter	Branom Instruments
6. Tom Pittenbarger	Proctor Sales
7. Mike Lueck	Midwest Instruments

#### Satellite System Management Agencies (SMA) and Contract Operators

1. Bob Hunter	SMA - Kitsap Public Utility District 1
2. Cas Hancock	Contract Operator – Island, San Juan, Skagit, Snohomish, and Whatcom Counties
3. David Griffin	Contract Operator – Benton, Klickitat, Skamania, and Yakima Counties
4. Mike Kitz	SMA - Clallam County Public Utility District 1
5. Steve Cade	Contract Operator – San Juan County

## **Appendix B: Cost information**

### **Survey Questions to Utilities**

**What would the cost be to you or your utility for having an operator on call and available 24 hours per day, seven days per week and able to take action within two hours?**

Utility 1: No cost above current operations.

Utility 2: This would not affect the City of Bellevue or other larger utilities because they already have on call systems in place. However, smaller water systems employing a certified operator may see a cost increase. For instance on call personnel at the City of Bellevue receive ~\$360/week + 3 hour minimum call out at time and half.

Utility 3: Presently \$108 per week.

SMA/Contract Operator 2: As long as making a phone call or sending an email for public notifications counts as “initiating action”, there is no impact or cost from the 2 hour requirement.

SMA/Contract Operator 5: The 24/7 requirement and 2 hour response time is “pretty much how we’ve been doing it. I would anticipate minimal increase in cost to a system.” To guarantee that someone is on call 24/7, his business would charge up to an additional 3 percent. The minimum he charges small systems ranges between \$200 - \$400 per month. So the increase in cost would be up to \$8 per month for a water system.

**How much time will it take a CCS to review inspection and field test reports for backflow preventers that protect the public water system?**

Utility 1: Approximately 160 hours per year.

Utility 2: It depends on how many backflow assemblies the utility tracks. Probably ~30 seconds to review each test report. The City of Bellevue currently tracks ~11,100 backflow assemblies.

Utility 3: We presently assign our CCS to do this fulltime.

CCC Specialist 1: 5 to 6 minutes apiece.

CCC Specialist 2: 3 minutes (if the report is complete).

**How much time will it take a CCS to take follow up action (either in general or provide specific examples of actions and time associated with each one)?**

Utility 2: If only a phone call is needed then probably 2-5 minutes. If a site visit is required then 30-60 minutes.

Utility 3: We presently assign our CCS to do this fulltime.

CCC Specialist 1: Worst case scenario about 72 hours.

CCC Specialist 2: Non-compliant reports may add approximately 15 minutes to review.



**How much does a CCS that is responsible for implementing the cross-connection control program get paid—either per hour or as a contracted amount?**

Utility 1: \$45.05 per hour including benefits.

Utility 2: I would estimate the pay range to be \$25-\$40/hour for a full time employee plus benefits. I would estimate the contracted amount to be \$75/hour.

Utility 3: Presently its \$55,594 annually per Union contract. Wages only w/o the costs of benefits which can be an additional 30%.

CCC Specialist 1: Currently paid \$63,000 per year.

CCC Specialist 2: I receive about \$30 per hour in compensation.

**How much time will it take a BAT to:**

**a. Perform an inspection of an air gap?**

Utility 1: 15 minutes.

Utility 2: 1 minute once on site. Driving to and from the location is what takes time.

Utility 3: Avg 20 minutes depending on location.

CCC Specialist 1: 10 minutes.

CCC Specialist 2: 10 minutes.

CCC Specialist 3: 5 seconds.

**b. Conduct a field test of a backflow prevention assembly?**

Utility 1: 30 minutes.

Utility 2: 5 minutes once on site providing the assembly is accessible (not buried, flooded, etc).

Utility 3: 20 min –hr depending on findings.

CCC Specialist 1: 10-20 minutes.

CCC Specialist 2: 15 minutes.

CCC Specialist 3: typically it takes about 15 minutes.

**For BAT'S, do you typically have set prices for your services or do you charge for services based on an hourly rate? Please provide the cost information below:**

**a. Charge for air gap inspection:**

Utility 2: \$40-\$75.

CCC Specialist 1: \$35.

CCC Specialist 2: Local BAT's charge about \$35 to test/inspect backflow assemblies.

CCC Specialist 3: \$38.50.

**b. Charge for AVB inspection:**

Utility 2: \$40-\$75.

CCC Specialist 1: \$35.

CCC Specialist 2: Local BAT's charge about \$35 to test/inspect backflow assemblies.

**c. Charge for assembly field test:**

Utility 2: \$40-\$75.

CCC Specialist 1: \$35.

CCC Specialist 2: Local BAT's charge about \$35 to test/inspect backflow assemblies.

CCC Specialist 3: \$38.50.

**d. Charge for repair (and retest, if applicable):**

Utility 2: \$75/hour + parts + retest.

CCC Specialist 1: \$35 for labor + parts.

CCC Specialist 3: \$55 per hour plus tax.

**e. Hourly rate:**

Utility 2: \$75/hour.

CCC Specialist 1: \$35 per hour.

CCC Specialist 3: \$55 per hour plus tax.

**How much will it cost a BAT to purchase all the proper equipment, including a field test kit that meets the USC 10<sup>th</sup> Edition Manual criteria, to carry out the duties mandated in this section?**

Utility 1: \$1,000.

Utility 2: \$700-\$1000.

CCC Specialist 1: Field Test kit \$550-\$1,500 plus test fittings and miscellaneous tools (\$300).

CCC Specialist 2: \$1,000.

CCC Specialist 3: The basic costs would include the test kit (\$850 + tax), associated fittings to adapt to any size assay (\$300 + tax), gas detector for testing vaults/confined spaces (\$650 + tax), pipe wrenches & channel lock pliers for cinching down OS&Y valves and installing adapter fittings (\$100 +tax).

The backflow preventer inspection and field test report must contain the following information:

- Facility and hazard info;
- Assembly or AVB info;
- Installation info and ID if the assembly or AVB is properly installed;
- Results of inspections and field tests;
- Assembly or AVB maintenance and repair info;
- Field test kit info;
- Results of air gap inspections;
- Remarks (if applicable) and additional information if requested by the purveyor;

- BAT info (name, certification number);
- Date the work was performed; and
- Signature of BAT and statement of work.

**How long will it take to fill out a report with all the information listed above?**

Utility 1: 5 minutes.

Utility 2: ~3 minutes.

Utility 3: 10-15 minutes.

CCC Specialist 1: 3-4 minutes.

CCC Specialist 2: 5 minutes.

CCC Specialist 3: 10 minutes max.

**Are you currently required to fill out a report that includes most or all of the information required in this new rule section (the list above)?**

Utility 1: Yes.

Utility 2: Yes.

Utility 3: Yes.

CCC Specialist 1: Yes.

CCC Specialist 2: Yes.

CCC Specialist 3: Yes.

Utility 4 made a single comment: After reviewing the cost questions, and taking into account you only want “negative” impacts, I don’t think I’m going to be able to help you. All the changes that impact an operator or CCS we already do, so there is no impact.

**How much will it cost to have all the proper equipment, including field test kits meeting the USC 10<sup>th</sup> Edition Manual?**

BAT1 - Contact the manufacturer.

BAT2 - Don’t know. Contact the manufacturer.

**How much will it cost to have a test kit serviced at a qualified lab for accuracy verification, recalibration (if found inaccurate), and repair (list hourly rate if applicable)?**

BAT1 -Accuracy verification: \$85

Recalibration (if found inaccurate):

Repair (list hourly rate if applicable): range \$10- \$200 in addition to the \$85 fee

BAT2 -Accuracy verification: \$80

Recalibration (if found inaccurate): Based on what needs to be done

Repair (list hourly rate if applicable): typically \$ 40 - \$270 in addition to the \$80 fee

BAT3 - Accuracy verification: \$90

Recalibration (if found inaccurate):

Repair (list hourly rate if applicable): most commonly costs about \$100 to repair

BAT4 - Accuracy verification: \$75

Recalibration (if found inaccurate):

Repair (list hourly rate if applicable): \$100 for a minor repair; standard repair \$175

**How much it would cost to upgrade a test kit to meet the standards in the USC 10<sup>th</sup> Edition Manual?**

BAT1 – Cannot upgrade existing test kits. Purchasing a new one meeting USC 10<sup>th</sup> Edition standards would cost a minimum of \$750.

BAT2 – Not totally confident he knows all the requirements of the USC 10<sup>th</sup> edition. Through routine accuracy verification and recalibration, can adjust test kit to meet new standards. Same costs as Question 5.

BAT3 – Cannot upgrade. New test kit will cost a minimum of \$870.

BAT4 – May be able to upgrade, but upgrading is likely to be cost-prohibitive. New test kit will cost a minimum of \$750.